

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

Listing of Claims:

Please **amend** the claims as follows:

Claims 1-123 (Cancelled)

Claim 124 (Previously Presented) An isolated polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide which is the complement of a DNA sequence encoding a *Neisseria* surface protein, wherein said *Neisseria* surface protein:

- (i) is resistant to proteinase K,
 - (ii) has an apparent molecular weight of 22 kDa; as measured by SDS-PAGE with or without 2-mercaptoethanol and
 - (iii) is stained by Coomassie blue,
- wherein said polypeptide is antigenic, and
wherein said stringent conditions comprise incubating said polynucleotides at 42°C with a solution comprising 50% formamide.

Claim 125 (Cancelled)

Claim 126 (Withdrawn) The isolated polypeptide of claim 124, comprising a sequence selected from the group of sequences consisting of SEQ ID NO:9; SEQ ID NO:10, SEQ ID NO:11, SEQ ID NO:12, SEQ ID NO:13, SEQ ID NO:14, SEQ ID NO:15, SEQ ID NO:16, SEQ ID NO:17, SEQ ID NO:18, SEQ ID NO:19, SEQ ID NO:20, SEQ ID NO:21, SEQ ID NO:22, SEQ ID NO:23, SEQ ID NO:24, SEQ ID NO:25, and SEQ ID NO:26.

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

Claim 127 (Previously Presented) The isolated polypeptide of claim 124, comprising amino acids 31 to 55 of SEQ ID NO:2 and which is antigenic.

Claim 128 (Previously Presented) The isolated polypeptide of claim 124, comprising amino acids 51 to 86 of SEQ ID NO:2 and which is antigenic.

Claim 129 (Previously Presented) The isolated polypeptide of claim 124, comprising amino acids 110 to 140 of SEQ ID NO:2 and which is antigenic.

Claim 130 (Cancelled)

Claim 131 (Withdrawn) A method of isolating the polypeptide of claim 124, comprising:

- a) isolating a culture of *Neisseria meningitidis* bacteria;
- b) isolating an outer membrane portion from said culture; and
- c) isolating said antigen from said outer membrane portion.

Claim 132 (Withdrawn) The method according to claim 131, further comprising treating said outer membrane with proteinase K.

Claim 133 (Previously Presented) A pharmaceutical composition comprising the polypeptide of claim 124.

Claim 134 (Previously Presented) The pharmaceutical composition of claim 133, which is a vaccine.

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

Claim 135 (Previously Presented) The pharmaceutical composition of claim 134, comprising a pharmaceutical excipient.

Claim 136 (Previously Presented) A method of preventing infection by a *Neisseria* pathogen, comprising administering an effective amount of the vaccine of claim 134.

Claim 137 (Previously Presented) The method according to claim 136, wherein said pathogen is a *Neisseria meningitidis*.

Claims 138–157 (Canceled)

Claim 158 (Withdrawn) A method for detection of an antibody specific to a *Neisseria* antigen in a biological sample, comprising:

- a) isolating a biological sample from a patient;
- b) incubating the antigen of claim 124 with said the biological sample; and
- c) detecting antigen specifically bound to the antibody.

Claim 159 (Withdrawn) The method according to claim 158, wherein said antigen is a *Neisseria meningitidis* antigen.

Claim 160 (Withdrawn) The method according to claim 159, wherein said antigen is a *Neisseria meningitidis* 22 kDa surface protein.

Claim 161 (Cancelled)

Claim 162 (Canceled)

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

Claim 163 (Withdrawn) A method for detection of *Neisseria* bacteria in a biological sample, comprising,

- a) isolating a biological sample from a patient;
- b) contacting said sample with a DNA probe that is capable of hybridizing under stringent conditions with a polynucleotide encoding a *Neisseria* surface protein according to claim 91; and
- c) detecting hybridization by said DNA probe to said polynucleotide.

Claim 164 (Withdrawn) The method according to claim 163, wherein said DNA probe comprises the polynucleotide of claim 94.

Claim 165 (Withdrawn) The method according to claim 163, wherein said DNA probe comprises the polynucleotide of claim 97.

Claim 166 (Withdrawn) The method according to claim 163, wherein said DNA probe comprises the polynucleotide of claim 100.

Claim 167 (Withdrawn) The method according to claim 163, wherein said DNA probe comprises the polynucleotide of claim 103.

Claim 168 (Withdrawn) The method according to claim 163, wherein said DNA probe is an oligomer having a sequence complementary to at least 6 contiguous nucleotides of the polynucleotide of claim 91.

Claim 169 (Withdrawn) The method according to claim 163, further comprising a step of amplifying a target DNA by polymerase chain reaction with a set of oligomers having a sequence (i)

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

complementary to at least 6 contiguous nucleotides of the polynucleotide of claim 91 and (ii) flanking said target DNA.

Claim 170 (Previously Presented) The vaccine of claim 134, which further comprises an adjuvant.

Claim 171 (Previously Presented) The vaccine of claim 170, wherein the adjuvant is a liposome adjuvant.

Claim 172 (Previously Presented) The method of claim 136, wherein the vaccine further comprises an adjuvant.

Claim 173 (Previously Presented) The method of claim 172, wherein the adjuvant is a liposome adjuvant.

Claim 174 (Previously Presented) An isolated polypeptide from the surface of *Neisseria* bacteria which

- (i) is resistant to proteinase K,
 - (ii) has an apparent molecular weight of 22 kDa as measured by SDS-PAGE with or without 2-meraptoethanol, and
 - (iii) is stained by Coomassie blue,
- wherein said polypeptide is antigenic.

Claim 175–179 (Cancelled)

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

Claim 180 (Previously Presented) The isolated polypeptide of claim 124 having an antigenicity effective for use as a vaccine.

Claim 181 (Previously Presented) The isolated polypeptide of claim 174 having an antigenicity effective for use as a vaccine.

Claim 182 (Currently Amended) An isolated polypeptide of claim 124, wherein said polypeptide is capable of eliciting antibodies that are specific to said polypeptide.

Claim 183 (Previously Presented) An isolated polypeptide of claim 124, wherein said polypeptide is capable of eliciting bacteriolytic antibodies against *Neisseria meningitidis*.

Claim 184 (Currently Amended) An isolated polypeptide of claim 174, wherein said polypeptide is capable of eliciting antibodies that are specific to said polypeptide.

Claim 185 (Cancelled)

Claim 186 (Cancelled)

Claim 187 (Previously Presented) An isolated polypeptide of claim 124, which is free of any other *Neisseria meningitidis* polypeptide.

Claim 188 (Previously Presented) A composition comprising an isolated polypeptide of claim 187, and a pharmaceutically acceptable excipient.

Claim 189 (Previously Presented) An isolated polypeptide of claim 174, which is free of any other *Neisseria meningitidis* polypeptide.

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

Claim 190 (Previously Presented) A composition comprising an isolated polypeptide of claim 189, and a pharmaceutically acceptable excipient.

Claim 191 (Previously Presented) A vaccine, comprising a polypeptide of claim 187 and an adjuvant.

Claim 192 (Previously Presented) A method of manufacturing a vaccine, comprising formulating a polypeptide of claim 187 with an adjuvant.

Claim 193 (Previously Presented) A vaccine, comprising a polypeptide of claim 190 and an adjuvant.

Claim 194 (Previously Presented) A method of manufacturing a vaccine, comprising formulating a polypeptide of claim 189 with an adjuvant.

Claim 195 (Previously Presented) An isolated polypeptide of claim 124, wherein said polypeptide is produced recombinantly.

Claim 196 (Previously Presented) An isolated polypeptide of claim 174, wherein said polypeptide is produced recombinantly.

Claim 197 (Previously Presented) An isolated polypeptide fragment of a polypeptide from the surface of Neisseria bacteria which

- (i) is resistant to proteinase K,
- (ii) has an apparent molecular weight of 22kDa as measured by SDS-PAGE with or without 2-mercaptoethanol, and

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

(iii) is stained by Coomassie blue,
wherein said polypeptide is antigenic and capable of eliciting antibodies which are specific to said polypeptide.

Claim 198 (Previously Presented) The isolated polypeptide of claim 197 having an antigenicity effective for use as a vaccine.

Claim 199 (Previously Presented) The isolated polypeptide of claim 197, wherein said polypeptide is capable of eliciting bacteriolytic antibodies against *Neisseria meningitidis*.

Claim 200 (Previously Presented) The isolated polypeptide of claim 197, comprising amino acids 31 to 55 of SEQ ID NO. 2.

Claim 201 (Previously Presented) The isolated polypeptide of claim 197, comprising amino acids 51 to 86 of SEQ ID NO:2.

Claim 202 (Previously Presented) The isolated polypeptide of claim 197, comprising amino acids 110 to 140 of SEQ ID NO:2.

Claim 203 (Previously Presented) The isolated polypeptide of claim 197, which is fragment of SEQ ID NOS: 2, 4, 6, or 8.

Claim 204 (Previously Presented) The isolated polypeptide of claim 197, which is free of any other *Neisseria meningitidis* polypeptide.

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

Claim 205 (Previously Presented) The isolated polypeptide of claim 197, wherein said polypeptide is produced recombinantly.

Claim 206 (Previously Presented) A composition comprising a polypeptide of claim 197 and an adjuvant.

Claim 207 (Previously Presented) The isolated polypeptide of claim 124, wherein the complement is the complement of SEQ ID NO: 1.

Claim 208 (Previously Presented) The isolated polypeptide of claim 124, wherein the hybridization conditions further comprise washing twice for 5 min in 2x SSC, and 0.1% SDS at room temperature; and washing twice for 15 min at 68°C.

Claim 209 (Previously Presented) The isolated polypeptide of claim 124, wherein the complement is the complement of SEQ ID NO: 1 and wherein the hybridization conditions further comprise washing twice for 5 min in 2x SSC, and 0.1% SDS at room temperature; and washing twice for 15 min at 68°C.

Claim 210 (New) An isolated polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide which is the complement of a DNA sequence encoding a *Neisseria* surface protein, wherein said *Neisseria* surface protein:

- (i) is resistant to proteinase K,
 - (ii) has an apparent molecular weight of 22 kDa; as measured by SDS-PAGE with or without 2-mercaptoethanol and
 - (iii) is stained by Coomassie blue,
- wherein said stringent conditions comprise incubating said polynucleotides at 42°C

§Appl. No. 09/684,883
Amdt. dated March 16, 2006
Reply to Office Action of, September 16, 2005

with a solution comprising 50% formamide, and
wherein said polypeptide is antigenic and free of any other *Neisseria meningitidis*
polypeptide.

Claim 211 (New) An isolated polypeptide from the surface of *Neisseria* bacteria which
(i) is resistant to proteinase K,
(ii) has an apparent molecular weight of 22 kDa as measured by SDS-PAGE with
or without 2-meraptoethanol,
(iii) is stained by Coomassie blue,
wherein said polypeptide is antigenic and free of any other *Neisseria meningitidis*
polypeptide.